

REMARKS/ARGUMENTS

The present application contains claims 1, 3-10 and 14-52. Claims 14-52 have been withdrawn as being directed to a non-elected invention. Claims 2 and 11-13 have been canceled without prejudice. Claim 1 has been amended to incorporate the limitations of canceled claim 11.

It is noted that a response period of three months has been set for responding to the Final Office Action. It is submitted that this Amendment, together with an RCE and the requisite fees, have been timely filed.

It is noted that claim for foreign priority has been acknowledged and that the certified copies of the priority documents have been received.

In reference to the Detailed Action, it is noted that claims 14-52 stand withdrawn being directed to a non-elected sub-combination, it being understood that the withdrawn claims may be reinstated.

Claim Rejections - 35 U.S.C. §103

It is noted that the rejection of Claim 1 under 35 U.S.C. §103(a) as unpatentable over Andrew C. Gallagher (U.S. Patent Application Publication No. 2003/0215230) (hereinafter, "Gallagher") in the prior Office Action has been withdrawn and that Claim 1, together with claims 3-5, have now been rejected under 35 U.S.C. 103(a) as unpatentable over Gallagher and Yasuo Suda (U.S. Patent Application Publication No. 2002/0122124) (hereinafter, "Suda") and further in view of Kazuyuki Nako (U.S. Patent No. 5,940,544) (hereinafter, "Nako"). This rejection is respectfully traversed. Claim 11 has been rejected under 35 U.S.C. §103(a) as unpatentable over Gallagher, Suda and Nako and further in view of Woo Jin Song et al. (U.S. Patent Application Publication No. 2002/0164083) (hereinafter, "Song et al."). Claim 11 having been canceled and its limitations incorporated into

amended claim 1, the rejection of amended claim 1 based on Gallagher, Suda, Nako and Song et al. is respectfully traversed.

The Examiner, in the rejection of claim 11, admits that “Gallagher and Suda and Nako do not explicitly disclose the distortion correcting range calculating unit calculates an input image for next distortion correction processing during executing the distortion correction processing by the distortion correcting unit” and it is submitted that amended claim 1, which contains the limitations of claim 11 thus distinguishes over Gallagher, Suda and Nako taken alone.

Song et al. is limited to teaching successively updating a distortion parameter until it converges to provide an accurate distortion parameter as recited in paragraph [0111] in Song et al. Although Applicant admits that “the results of the current distortion processing affects the next distortion processing,” there is neither teaching nor remote suggestion in Song et al. of calculating an input range for distortion correcting processing on a next block image data **concurrently** during executing the distortion correcting processing on **the block of image data preceding said next block of image data**. This is accomplished in the embodiment of the present application set forth in claim 1 by providing a distortion correction range calculating unit (see Figure 1, unit 12) which is separate from the distortion correcting unit enabling the unique timing of the input range calculation and the distortion correcting calculation (see Figure 1, unit 8), which feature, likewise, is neither taught nor remotely suggested by Song et al. When distortion correction on one block of the divided image data is completed, the input image range for the next distortion correction processing to be performed is already determined and ready for use by the distortion correcting unit, enabling the sequential processing to be performed smoothly and without delay, as compared with Song et al. who lack this capability.

Song et al. is limited to teaching an image projection system, see Figure 4, with distortion correction capability, by projecting a reference image (a grid image) derived from generator 28 and displayed. The **entire** projected image is picked up by camera 27 and applied to information extractor 29, where it is compared with the **entire** reference image derived from generator 28. When extractor 29 detects that distortion is present, a distortion parameter is stored in memory 24-4. A single controller 24-2 corrects for the distortion and the corrected image is displayed. The corrected displayed image is picked up by camera 27 and extractor 29 again checks for distortion. The repeating procedure taught by Song et al. approaches a distortion-free displayed image. There is no teaching or suggestion of dividing image data into blocks and sequentially performing distortion correcting processing and calculating an input image range necessary for distortion correction processing on the divided image data. Song et al. is limited to using the entire image and not performing both parameter extraction and distortion correction successively on block image data divided from the image, in addition to lacking teaching of performing input range processing of a next block of image data concurrently with distortion correction processing of a block of image data preceding said next block of image data.

Gallagher and Suda, as admitted by the Examiner, fail to teach sequentially performing distortion correction in units of block image data obtained by dividing image data.

Although Nako subdivides the picture into multiple blocks, there is no teaching or suggestion of performing distortion correction range processing on the divided blocks to calculate an input image range necessary for distortion correction processing.

For the above reasons, it is submitted that claim 1, as amended, patentably distinguishes over Gallagher, Suda, Nako and Song et al.

Claims 3-6 and 8-10 all depend from claim 1 and carry all of its limitations and are thus deemed to patentably distinguish over Gallagher, Suda, Nako and Song et al.

Claim 7 has been rejected over Gallagher, Suda and Nako and further in view of Hiroyuki Suzuki et al. (U.S. Patent No. 6,801,671) (hereinafter, "Suzuki et al.") This rejection is respectfully traversed.

Claim 7 depends from claim 1 and is submitted to distinguish over Gallagher, Suda and Nako taken alone. Suzuki et al. is lacking in the features lacking in Gallagher, Suda and Nako taken alone and, in view of amended claim 1 incorporating the limitations of canceled claim 11, Suzuki et al. is lacking in the features lacking in Gallagher, Suda, Nako and Song et al. taken alone and for these reasons it is submitted that claim 7 patentably distinguishes over the combination of Gallagher, Suda, Nako, Song et al. and Suzuki et al.

In view of the foregoing, it is submitted that claims 1 and 3-10 are patentable over the cited prior art and reconsideration and allowance are respectfully requested.

Conclusion


If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

Applicant: Higurashi et al.
Application No.: 10/566,408

In view of the foregoing amendment and remarks, Applicants respectfully submit that the present application, including claims 1 and 3-10, is in condition for allowance and a notice to that effect is respectfully requested.

Respectfully submitted,

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Enclosure